

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. **(currently amended)** A method for producing a fused silica glass containing titania, comprising:
 - synthesizing particles of silica and titania by delivering a mixture of a silica precursor and a titania precursor to a burner;
 - growing a porous preform by successively depositing the particles on a deposition surface at a temperature below a minimum temperature at which the particles can consolidate either partially or fully into dense glass while rotating and translating the deposition surface relative to the burner; and
 - subsequently consolidating the porous preform into dense glass.
2. **(currently amended)** The method of claim 1, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.
3. **(canceled)**
4. **(original)** The method of claim [[3]] 1, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.
5. **(original)** The method of claim 1, further comprising dehydrating the porous preform by exposing the porous preform to a heated, halide-containing atmosphere prior to consolidation.
6. **(original)** The method of claim 5, wherein the heated, halide-containing atmosphere comprises chlorine.

7. **(original)** The method of claim 5, wherein the heated, halide-containing atmosphere comprises fluorine.
8. **(original)** The method of claim 5, wherein the temperature of the heated, halide-containing atmosphere is in a range from 900 to 1100°C.
9. **(original)** The method of claim 1, wherein the glass contains 2 to 12% by weight titania.
10. **(canceled)**
11. **(canceled)**
12. **(canceled)**
13. **(currently amended)** The method of claim ~~[[10]]~~ 5, wherein a translation speed of the deposition surface is adjusted to maintain a substantially constant distance between an end portion of the porous preform remote from the deposition surface and the burner during deposition.
14. **(canceled)**
15. **(currently amended)** The method of claim ~~[[14]]~~ 5, wherein consolidating the porous preform into dense glass comprises heating the porous preform to a temperature in a range from 1200 to 1900°C.

16. **(withdrawn)** A mask blank for extreme ultraviolet lithography made by a process comprising:

synthesizing particles of silica and titania by delivering a mixture of a silica precursor and a titania precursor to a burner;

growing a porous preform by successively depositing the particles on a deposition surface while rotating and translating the deposition surface relative to the burner;

consolidating the porous preform into a dense glass; and

finishing the dense glass into a mask blank.

17. **(withdrawn)** The mask blank of claim 16, comprising the glass contains 2 to 12% by weight titania.

18. **(withdrawn)** A mask blank for extreme ultraviolet lithography made by a process comprising:

synthesizing particles of silica and titania by delivering a mixture of a silica precursor and a titania precursor to a burner;

growing a porous preform by successively depositing the particles on a deposition surface while rotating and translating the deposition surface relative to the burner;

dehydrating the porous preform by exposing the porous preform to a heated, halide-containing atmosphere; consolidating the porous preform into a dense glass; and

finishing the dense glass into a mask blank.

19. **(withdrawn)** The mask blank of claim 18, wherein the glass contains 2 to 12% titania.

20. **(new)** The method of claim 1, wherein the minimum temperature is approximately 1200°C.

21. **(new)** The method of claim 20, wherein the temperature at which the particles are deposited is approximately 200 to 500°C less than the minimum temperature.

22. **(new)** The method of claim 1, wherein the deposition surface is such that the porous preform is grown without a hole in its center.

23. **(new)** The method of claim 1, wherein a variation in coefficient of thermal expansion of the dense glass is in a range from -5 ppb/°C to +5 ppb/°C.